REMARKS

I. INTRODUCTION

In response to the Office Action dated December 16, 2005, claims 20, 37 and 40 have been amended. Claims 20-40, 55-74 and 78-81 remain in the application. Entry of these amendments, and re-consideration of the application, as amended, is requested.

II. NON ART REJECTIONS

On page (2) of the Office Action, claims 27-28 and 37 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Applicants' attorney has amended the claim 37 to overcome these rejection.

However, Applicants' attorney traverses the rejections with regard to claims 27-28. Applicants' attorney notes that there is no discussion of the alleged deficiencies of claims 27-28 in the Office Action, and thus is unsure whether the claims were meant to be rejected. Consequently, Applicants' attorney requests withdrawal of the rejections directed to claims 27-28.

III. PRIOR ART REJECTIONS

A. The Office Action Rejections

On page (3) of the Office Action, claims 20, 21, 23-34, and 36 were rejected under 35 U.S.C. §102(b) as being anticipated by Ward, U.S. Patent No. 4,636,947 (Ward). In paragraph (8) of the Office Action, claims 22, 24-33, 35, 37-40, 55-74, and 78-81 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ward in view of Kraslavsky et al., U.S. Patent No. 5,537,626 (Kraslavsky).

Applicants' attorney respectfully traverses these rejections.

B. The Ward Reference

Ward describes a method and apparatus for reducing customer transaction time in an automated teller machine (ATM) having various peripheral devices associated therewith. Each peripheral device associated with the ATM; e.g. a card handler mechanism, a printer mechanism, one or more cash dispenser mechanisms, and a depository mechanism, include a dedicated processor and memory for controlling the operation of the peripheral device connected thereto. The ATM also includes a peripheral control unit connected to the various subsystem controllers and to an

ATM control unit for receiving generated transaction sequence event messages and in response thereto concurrently processing the messages to initiate simultaneous real-time operation of the various peripheral devices. For example, the concurrent processing of transaction sequence event messages allows completion of the card ready activity, entry of a customer PIN and printing of the customer receipt header to take place simultaneously. This parallel activity of the peripheral devices reduces the elapsed time for a customer to complete an ATM transaction.

C. The Kraslavsky Reference

Kraslavsky describes an apparatus for coupling printer with LAN to control printer operation by transferring control parameters, printer status data and printer configuration data between printer and LAN. Specifically, Kraslavsky describes a method and apparatus for interfacing a printer to a local area network utilizes a circuit board coupled to the printer. A Small Computer System Interface (SCSI) is disposed on the board for transmitting print data to the printer and for receiving printer status data from the printer. A RAM is also disposed on the board, for storing the print data, the printer status data, and a plurality of application programs. A Local Area Network (LAN) interface is also disposed on the board, for receiving the print data from the LAN, and for transmitting the printer status data to the LAN. A processor is disposed on the board, for executing the plurality of application programs to cause the print data to be transmitted to the printer and the printer status data to be transmitted to the LAN. Preferably, printer control data may also be transmitted over the LAN to control printer functions.

D. Applicants' Claims Are Patentable Over References

Applicants' invention is patentable over the references, because the claims recite limitations not found in the references.

Nonetheless, the Office Action asserts that Ward teaches all the elements of the independent claim and some of the dependent claims, while Ward combined with Kraslavsky teaches the remaining dependent claims. Specifically, the Office Action states the following:

> 3. Regarding claim 20, Ward disclosed, a self-service terminal comprising a plurality of peripheral devices each of the peripheral devices having an independent associated control application, the control applications being operable to communicate with each other, whereby, in use, a peripheral device operates in response to a signal generated by another peripheral device (Ward, col. 2, lines 35-60 and Fig. 2, Ward teaches a terminal in a network where each of the peripheral

devices include a subsystem controller and memory for parallel transaction event processing among other devices, Ward teaches the protocol handler tasks for controlling data formatting and timing between devices communicating in an on-line network. In order for an ATM to properly operate, the peripherals function in a ordered sequence and therefore they do operate in response to signals generated by the peripheral devices whose operation comes beforehand in the sequence).

4. Regarding claim 21, Ward disclosed the limitations, substantially as claimed, as described in claim 20, including wherein the control applications communicate with each other using a peer-to-peer communication protocol (Ward, col. 3, lines 20-25, Fig. 2).

5. Regarding claim 23, Ward discloses the limitations, substantially as claimed, as described in claim 20, including wherein the control applications communicate with each other using signals addressed directly to selected peripheral devices so that a peripheral device only communicates with those peripheral devices whose operation depends on or is connected with the state of that peripheral device (Ward, col. 3, lines 40-60, col. 4, lines 1-10, 30-35, Ward disclosed that the peripherals operate in a transaction sequence, meaning that a peripheral device operates according to the operation of peripheral devices that operate before it).

6. Regarding claim 34, Ward discloses the limitations, substantially as claimed, as described in claim 20, including wherein, in use, each of the control applications are executed on a single central processor (Ward, col. 3, lines 20-26).

7. Regarding claim 36, Ward discloses the limitations, substantially as claimed, as described in claim 20, including wherein the peripheral devices are selected from the following peripheral devices: user interface, card reader, receipt printer, cash dispenser, and a bar code scanner (Ward, Fig. 2, 96).

In addition, the Office Action states the following:

9. Regarding claim 22, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein the control applications communicate with each other using broadcast signals in order to communicate a present state of the peripheral devices. Kraslavsky disclosed communication links that enable peripheral devices of a terminal to communicate with each other through broadcasting (Kraslavsky, col. 14, lines 5-22). It would have been obvious to one in the ordinary skill in the art at the time of the invention to incorporate the communication links of Kraslavsky into the invention of Ward in order to enable the peripheral devices of a terminal to communicate with one another, eliminating the need to use the Peripheral Control Unit.

10. Regarding claim 24, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein a control application that operates in response to a signal communicated from another peripheral device acknowledges receipt of that signal. Kraslavsky disclosed peripheral devices responding to broadcast signals (Kraslavsky, col. 14, lines 5-15). See motivation above.

11. Regarding claim 25, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 20, including wherein each control application is operable to identify any failed peripheral device that does not

acknowledge receipt of a signal, and to communicate the functional state of that failed peripheral device to other control applications (Kraslavsky, col. 14, lines 5-15). See motivation above.

12. Regarding claim 26, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein each peripheral device uses a registry for maintaining a record of the functioning peripheral devices in the terminal. Kraslavsky disclosed keeping statistics and a log of the devices (Kraslavsky, col. 14, lines 5-15). See motivation above.

13. Regarding claim 27, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein the control applications implement a team building process for indicating their availability. Kraslavsky disclosed peripheral devices indicating availability (Kraslavsky, col. 14, lines 5-15). See motivation above.

14. Regarding claim 28, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 27, including wherein as part of the team building process, each control application associated with an available peripheral device transmits a start-up signal (Kraslavsky, col. 14, lines 5-15). See motivation above.

15. Regarding claim 29, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 28, including wherein the start-up signal includes an identifier for the peripheral device being initialized and an address at which the peripheral device receives signals (Kraslavsky, col. 14, lines 5-15). See motivation above.

16. Regarding claim 30, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 29, including wherein the start-up signal is broadcast to other peripheral devices (Kraslavsky, col. 14, lines 5-15). See motivation above.

17. Regarding claim 31, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 30, including wherein the start-up signal is communicated directly to predetermined addresses that correspond to other peripheral devices (Kraslavsky, col. 14, lines 5-15, col. 17, lines 30-45). See motivation above.

18. Regarding claim 32, Ward disclosed the limitations, substantially, as claimed, as described in claim 20. Ward did not explicitly state wherein the control application associated with each peripheral devices creates a functional group registry, comprising the addresses and identity of each peripheral device that has sent a startup signal. Kraslavsky disclosed logging device information from startup signals received (Kraslavsky, col. 14, lines 5-15). See motivation above.

19. Regarding claim 33, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 32, including wherein each control application transmits a shut-down signal when its peripheral device is no longer able to operate properly; each control application being operable to modify its functional group registry in response to a shut-down signal from another peripheral device to indicate the removal of that peripheral device from operation (Kraslavsky, col. 14, lines 5-15, 30-45).

20. Regarding claim 35, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein, in use, each of the control applications is executed on a processor within its associated peripheral.

Kraslavsky disclosed a printer containing its own processor and running applications (Kraslavsky, col. 14, lines 5-45).

21. Claims 37-40, 55-74, and 78-81 include limitations similar to the limitations found in claims 20-36, and are therefore rejected under the same art as claims 20-36 as being substantially similar.

Finally, the Office Action provides the following comments:

Response to Amendment

Applicant's arguments filed 23 September 2005 have been fully considered but they are not fully persuasive.

112 Rejections

Examiner notes the typo of not providing a header stating the 112 grounds of rejection in the prior Office Action dated 6/23/2005. However, the prior Office Action clearly showed which claims were rejected under 112 as being unclear to Examiner. Applicant has provided amendments to claims 20-25, 27, 28, 32-35, 38 and 39 (as stated in the Response, page 10, last paragraph) to clarify the issues regarding these claims. However, Applicant has not responded to the 112 rejection of claim 37, provided above.

Art Rejections

Applicant states that in the teachings of Ward, "there is no capability for these peripheral devices to also communicate directly with other peripheral devices independently of the ATM." Applicant also states that "Ward does not teach or suggest that peripheral devices communicate directly with other peripheral devices independently, as well as under the control of a central processor." Applicant states that independent claims 20, 37, and 40 recite such functionality. See Applicant's Response, page 16, last paragraph through page 17, first paragraph.

After further search and consideration, Examiner respectfully disagrees. Independent claims 20, 37, and 40 recite peripheral devices within a self-service terminal, the peripheral devices being "controlled by a central processor".

Ward disclosed each ATM including a peripheral control unit (Ward, col. 3, lines 15-16).

Independent claims 20, 37, and 40 recite peripheral devices each "having an independent associated control application, the independent associated control applications being operable to communicate with each other".

Ward disclosed each peripheral device having a subsystem controller for facilitating parallel transaction event processing among the devices (Ward, col. 2, lines 35-41). As shown by Ward in an example, after a card is detected by the card handler mechanism, the ATM may perform printing header information on the customer receipt (Ward col. 2, lines 57-65). This would require the information from the card handler peripheral device to be communicated to the printer peripheral device. This would require their respective control applications to be in communication.

Claim Interpretation

As mentioned above, Applicant also states that "Ward does not teach or suggest that peripheral devices communicate directly with other peripheral devices independently.

This functionality of the peripheral devices communicating directly is NOT REQUIRED by the claims as explained herein for the following reasons:

Claim 20 recites the clause, "whereby, in use, a peripheral device operates in response to a signal generated by the central processor or another peripheral device".

Claim 37 recites the clause, "so that a peripheral device operates in response to one or more signals generated by the central processor or the independent associated control application of another peripheral device".

Any language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. See MPEP 2106, section II, subsection C for specific examples.

Even if this weren't the case (not limiting the scope of the claim), as in the case of claim 40, the claims still DO NOT REQUIRE the functionality of the peripherals directly communicating because independent claims 20, 37, and 40 all recite "to operate in response to signals communicated from the central processor OR independent associated control applications of the other peripheral devices. The expression, "A or B" is an alternative expression, only requiring either A or B or both. In the case of claim 40, Ward disclosed the control applications operating in response to signals communicated from the central processor (Ward, col. 3, lines 50-60).

Examiner strongly suggests clarification of claim terminology, mainly the term, "peripheral device" and what it encompasses.

In Applicant's previous response filed 1/19/2005, Applicant states "Peripheral devices are well-known in the art as devices controlled by, and subordinate to, a central processing unit in a computer system" [see Applicant's Response, filed 1/19/2005, page 10, lines 8-13].

In Applicant's current Response filed 9/23/2005, Applicant argues that the "peripheral devices communicate directly with other peripheral devices independently of the ATM" [see Applicant's Response, filed 9/2312005, page 16, last paragraph through page 17, first paragraph].

Examiner is unclear how a peripheral device, which must be controlled by a central processing unit, can communicate with another peripheral device independently of the central processing unit of the ATM.

Examiner respectfully requests clarification of what these peripheral devices include. Examiner also respectfully request Applicant to indicate portions of the Specification that are relied upon.

Examiner also suggests clarification of the difference between an "independent associated control application" and a device driver. What does the control application actually control?

It is the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which distinguishes over the prior art. The independent claims, as currently presented only require the standard functionality of an ATM, which is peripheral devices being controlled by a central processing unit, which Ward clearly taught, as shown in the above rejection.

Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted

the claims with scope parallel to the Applicant in the response and reiterates the need for the Applicant to more clearly and distinctly define the claimed invention.

In view of the above comments, Applicants' attorney has amended the claims in order to sufficiently clarify the distinctions between the Applicant's invention and the cited prior art references.

With regard to the assertions in the Office Action that it is unclear how a peripheral device, which must be controlled by a central processing unit, can communicate with another peripheral device independently of the central processing unit of the ATM, Applicants' attorney respectfully submits that this goes to the heart of the claims.

As is well known, peripheral devices are devices controlled by, and subordinate to, a central processing unit in a computer system. Nonetheless, in Applicants' invention, peripheral devices also operate in response to signals generated by another peripheral device.

Applicants' attorney respectfully submits that there is no contradiction in peripheral devices being controlled by, and subordinate to, a central processing unit, and also operating in response to signals generated by another peripheral device.

Further, the claims have been amended to eliminate the alternative expression (i.e., "or") that suggests or makes optional but does not require certain steps to be performed. In particular, the claims now recite that a "peripheral device operates in response to signals generated by the central processor as well as another peripheral device."

Finally, Applicants' attorney respectfully submits that the references do not teach or suggest these limitations.

For example, the Office Action asserts that Ward discloses each peripheral device having a subsystem controller for facilitating parallel transaction event processing among the devices (Ward, col. 2, lines 35-41). According to the Office Action, as shown by Ward in an example, after a card is detected by the card handler mechanism, the ATM may perform printing header information on the customer receipt (Ward col. 2, lines 57-65). The Office Action states that this would require the information from the card handler peripheral device to be communicated to the printer peripheral device, and that this would require their respective control applications to be in communication.

Applicants' attorney respectfully disagrees.

Applicants' attorney submits that this argument is based on hindsight, as there is no suggestion in Ward of performing the limitations of Applicants' claims. Apparently, because the above portions of Ward are silent as to how information from the card handler peripheral device is

communicated to the printer peripheral device, the Office Action feels it is inherent that Ward would require their respective control applications to be in communication .

However, there are other ways that Ward could be performing these functions. For example, it is likely that the peripheral devices of Ward are operating under the control of the PCU or ACU in the ATM. In other words, the ATM (specifically, the PCU or ACU) directly controls and communicates with the card handler peripheral device, and the printer peripheral device. In Applicants' invention, on the other hand, "peripheral device operates in response to signals generated by the central processor as well as another peripheral device." Nowhere does Ward describe any of these limitations.

Consider, for example, the portions of Ward cited above, which are reproduced below:

> Ward: Col. 2, lines 35-60 (actually, col. 2, line 29 – col. 3, line 3)
>
> Accordingly, the present invention is directed to a method and apparatus for reducing the time required to complete an ATM transaction. Generally, such reduction is achieved through utilization of "smart" or intelligent peripherals associated with the ATM and a novel task handling system. As used herein, the term "peripheral" refers to the various input/output devices used with the ATMs; e.g., the card handler, printer, cash dispenser, etc. Each of the peripheral devices includes a subsystem controller having a dedicated processor and memory for facilitating parallel transaction event processing among the devices. As used herein, "transaction events" refers to those events which occur during a transaction; e.g., "Asking for PIN," "Transaction Selection," "Dispense Cash," etc. In accordance with the present invention, the sequence of events that occur during a transaction may be altered by the financial institution through modification of a Transaction Sequence Table stored in the operating system of the ATM.
>
> Specifically, the method and apparatus of the present invention separates transaction events into two groups: a command/request event group and a response/status event group. The method of activating parallel activity of the peripheral devices is to initiate as many command/request events as possible before following them in the Transaction Sequence Table with their corresponding response/status events, such events causing a "wait state" to occur during the transaction. For example, after a card is detected by the card handler mechanism, the ATM may simultaneously perform the following command/request events: printing header information on the customer receipt, retrieving card data from the encoded magnetic stripe and requesting the customer to enter his/her personal identification number. Likewise, after PIN entry and validation, and transaction selection and host authorization, the ATM may perform the following command/request events simultaneously: printing the transaction description on the print receipt and dispensing currency. Therefore, since the command/request and response/status events occur simultaneously, overall customer transaction time is reduced.

Ward: FIG. 2

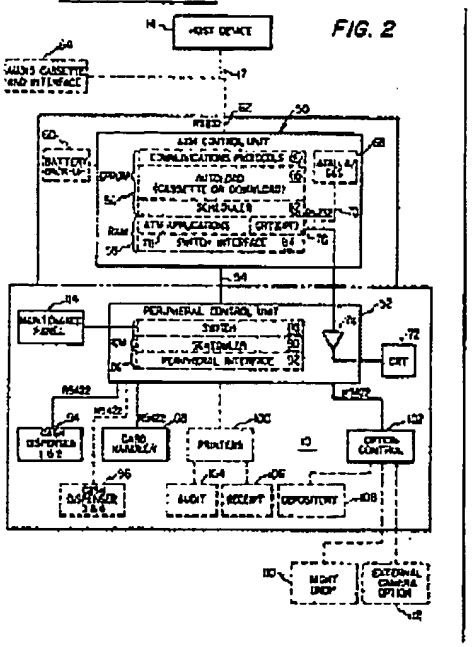

FIG. 2

In the above portions, Ward merely discloses an automated teller machine (ATM) having various "smart" peripheral devices associated therewith. However, in Ward, each peripheral device associated with the ATM, is under the direct control of the ATM (specifically, the PCU or ACU) and there is no capability for these peripheral devices to also communicate directly with other peripheral devices independently of the ATM. Specifically, Ward does not teach or suggest that peripheral devices communicate directly with other peripheral devices independently, as well as under the control of a central processor.

Applicants' independent claim 20, on the other hand, recite a self-service terminal comprising a plurality of peripheral devices connected to a central processor and controlled by that central processor, each of the peripheral devices having an independent associated control application for controlling the peripheral device, the independent associated control applications being operable to communicate directly with each other independent of the central processor; whereby, in use, a peripheral device operates in response to signals generated by the central processor as well as another peripheral device. Applicants' independent claims 37 and 40 recite similar limitations.

Kraslavsky fails to overcome these deficiencies of Ward. Recall that Kraslavsky was cited only against some of the dependent claims, and only for the purposes of describing communications links between peripheral devices that allow the peripheral devices to communicate with one another.

Thus, the references, taken individually or in combination, fail to teach the Applicants' claimed invention. Further, the various elements of the Applicants' claimed invention together provide operational advantages over the systems disclosed in the references. In addition, Applicants' invention solves problems not recognized by the references. Consequently, Applicants submit that claims 20-40 are allowable over the references.

IV. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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